

PATENT CLAIMS

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1. A sheet-processing machine (1) having at least one chain conveyor (13; 47; 112) which has chain gripper systems with grippers (16; 49; 113) for transporting sheets (2; 82; 83), wherein arranged on the chain conveyor (13; 47; 112) is at least one cross-cutting device (21; 57; 120; 130) which interacts with said chain conveyor and is designed for cutting transversely to the transporting direction the moving sheets (2; 82; 83) and/or the longitudinal strips of the sheets formed beforehand by the sheets being cut longitudinally, wherein the cross-cutting device (21; 57; 120; 130) has a rotating cutting cylinder (22; 121), wherein the cutting cylinder can be phase-adjusted in relation to the chain conveyor (13; 47; 112), and wherein a dedicated, position-controlled, electric motor is preferably arranged as the drive of the cutting cylinder.
2. The sheet-processing machine as claimed in claim 1, wherein the cross-cutting device (21; 57; 120; 130) has a rotating cutting cylinder (22; 121) with at least one cutting blade (26; 122) which interacts with a fixed mating blade (24; 123).
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3. The sheet-processing machine as claimed in claim 2, wherein the cutting blade (26; 122) and mating blade (24; 123), in relation to the axis of rotation of the cutting cylinder (22; 121) are arranged in a slightly oblique position and have a twist.
4. The sheet-processing machine as claimed in claim 1, wherein a suction box (35; 61) is arranged immediately downstream of the cross-cutting device (21; 57), as seen in the transporting direction (T).

5. The sheet-processing machine as claimed in claim 1, wherein an inspection device (4; 6) is arranged downstream of the cross-cutting device (21; 57).

6. The sheet-processing machine as claimed in claims 4 and 5, wherein the suction box (35; 61) is assigned to the inspection device (4; 6).

7. The sheet-processing machine as claimed in one of claims 1 to 6, wherein it is designed for trimming at least one transverse edge of the sheets.

10 Pub 037 8. The sheet-processing machine as claimed in claim 7, wherein it has a first cross-cutting device (21) for trimming the trailing transverse edge, a sheet-turning device (28) and a second, downstream cross-cutting device (57) for trimming the other transverse edge.

15 9. The sheet-processing machine as claimed in claim 7 or 8, wherein a longitudinal-cutting device (38) is installed upstream of the second cross-cutting device (57).

20 Pub 047 10. The sheet-processing machine as claimed in one of claims 1 to 7, wherein it is designed for cutting banknote sheets, which have banknote prints (WD) arranged in matrix form in longitudinal rows and transverse rows, into individual banknotes and, for this purpose, has a longitudinal-cutting device (106) for cutting the sheets
25 into longitudinal strips (L), in accordance with the longitudinal rows, and for simultaneously trimming the two longitudinal sheet edges, a chain conveyor (112), which is arranged downstream of said longitudinal-cutting device and has grippers (113) which draw the longitudinal strips,
30 and cross-cutting devices (120) which are spaced apart one behind the other along said chain conveyor (112), of which the number is equal to the number of transverse rows of a sheet minus one and which simultaneously cut off from the continuously moving longitudinal strips the banknotes
35 belonging to an original transverse row, banknotes of successive transverse rows being cut one after the other at discrete points in time, and wherein, furthermore, each

cross-cutting unit (120) is assigned a transporting arrangement which transports away the cut banknotes.

11. The sheet-processing machine as claimed in claim 10, wherein the transporting arrangement, which
5 transports away the cut banknotes, is formed by the cutting cylinder (121) of each cross-cutting device, said cutting cylinder preferably being designed as a controllable suction cylinder.

12. The sheet-processing machine as claimed in
10 claim 10, wherein the transporting arrangement, which transports away the cut banknotes is a transporting means, preferably a transporting belt, which is moved transversely to the transporting direction of the longitudinal strips.

15 13. The sheet-processing machine as claimed in one of claims 10 to 12, wherein arranged downstream of each of the abovementioned transporting arrangements, which transport away the individual banknotes, is at least one separating arrangement (124), which separates the
20 satisfactory banknotes (W) from misprints (W').

14. The sheet-processing machine as claimed in claim 13, wherein set-down locations (125, 126) for collecting all the satisfactory banknotes (W) and all the misprints (W') are arranged downstream of the
25 abovementioned separating arrangement.

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